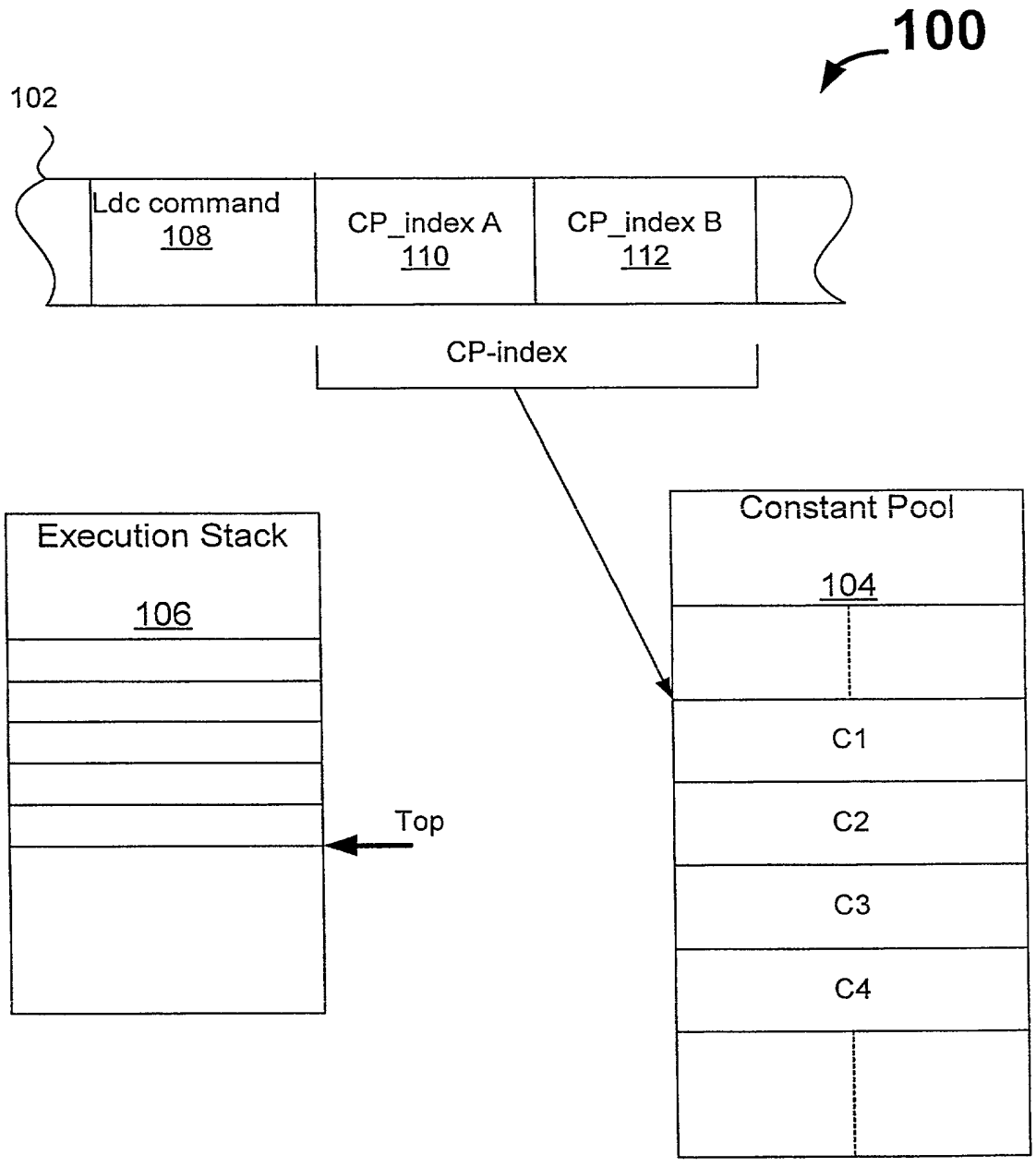
100
102
Ldc command
108
CP_index A
110
CP_index B
112
CP-index
Execution Stack
106
Top
Constant Pool
104
C1
C2
C3
C4

Fig. 1

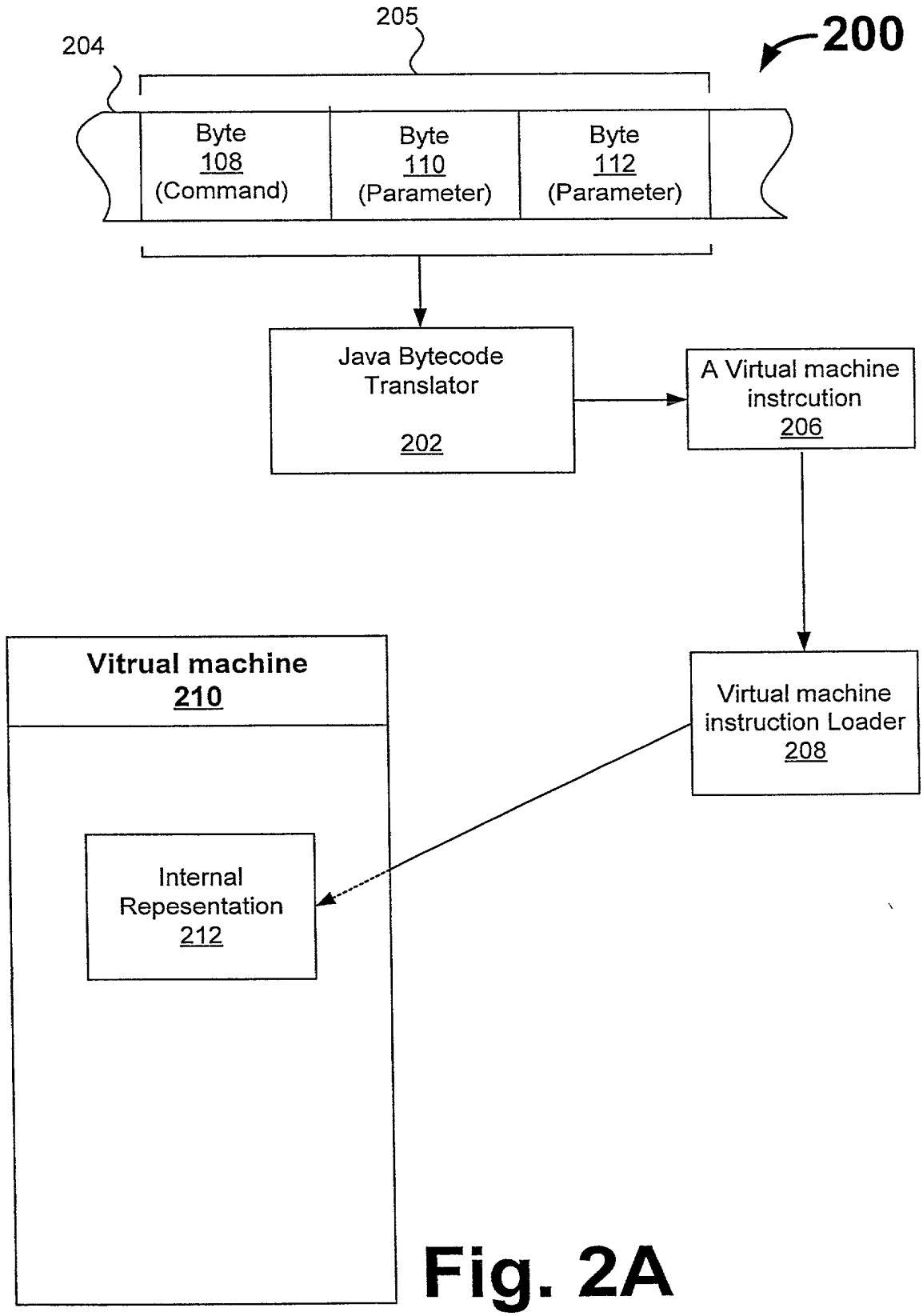
205
200
204
Byte
108
(Command)
Byte
110
(Parameter)
Byte
112
(Parameter)
Java Bytecode
Translator
202
A Virtual machine
instrcution
206
Vitrual machine
210
Virtual machine
instruction Loader
208
Internal
Repesentation
212

Fig. 2A

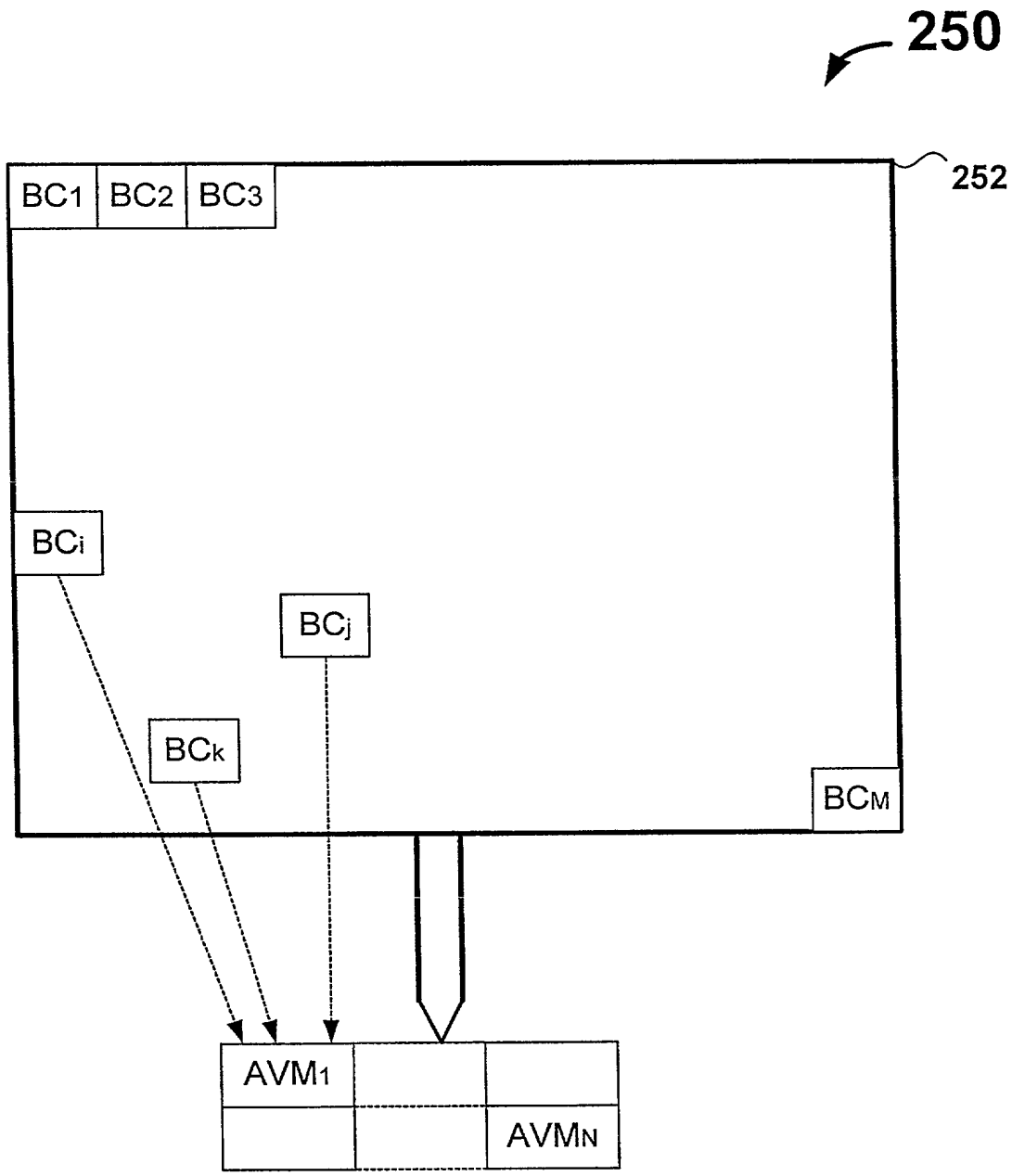

Fig. 2B

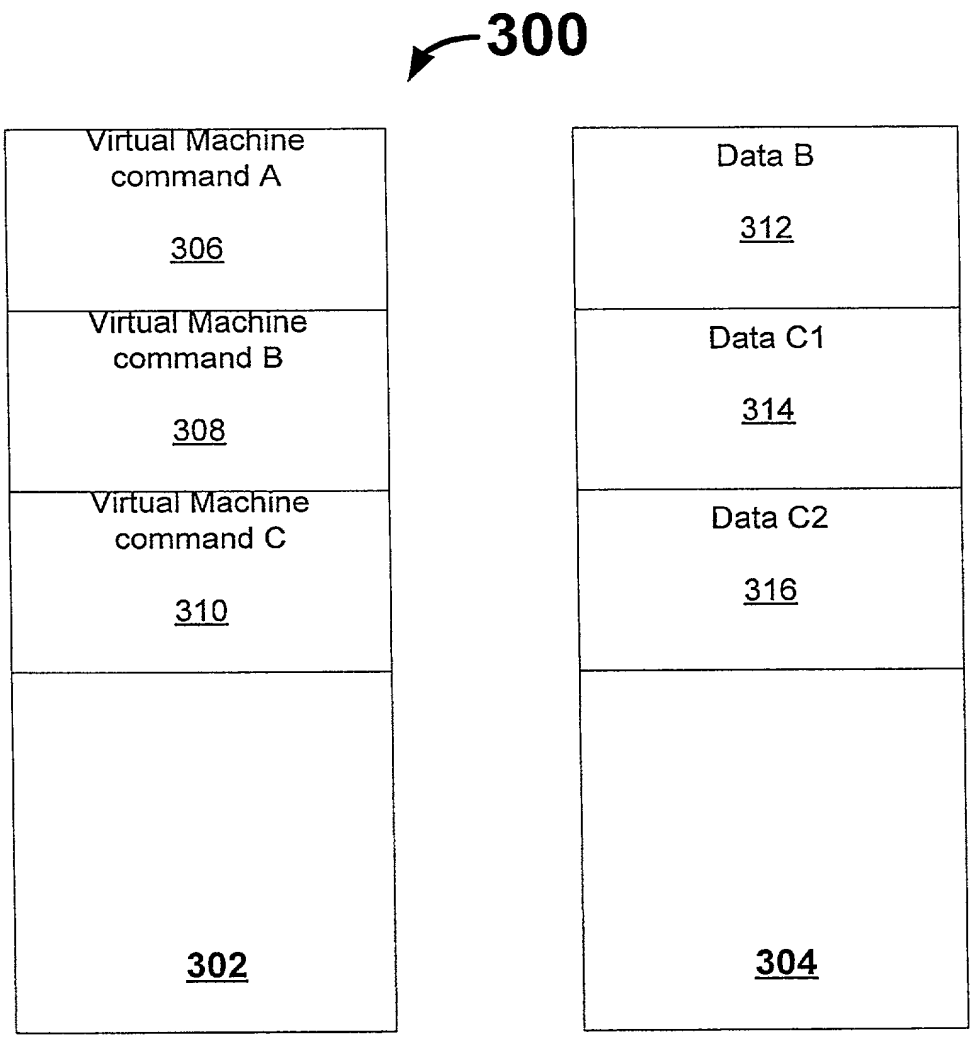
300
Virtual Machine command A
306
Virtual Machine command B
308
Virtual Machine command C
310
302
Data B
312
Data C1
314
Data C2
316
304

Fig. 3

Docket No. 2003-0518

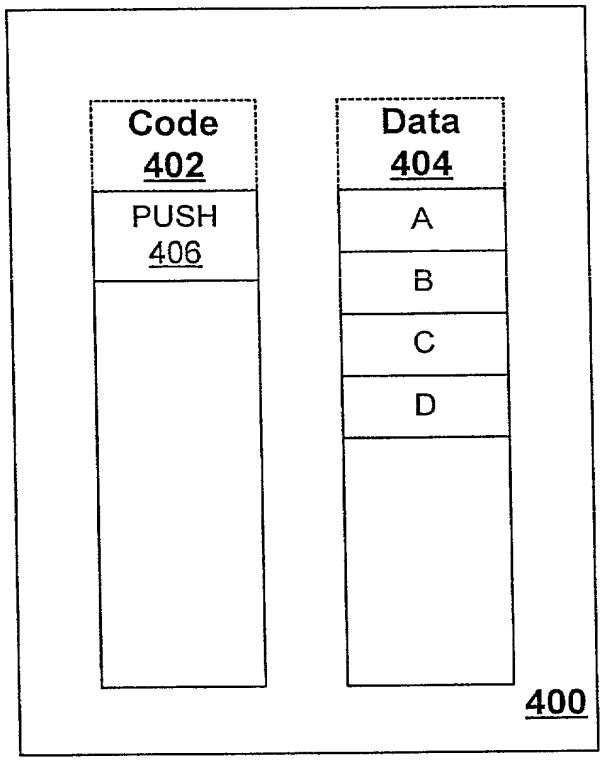

Fig. 4A

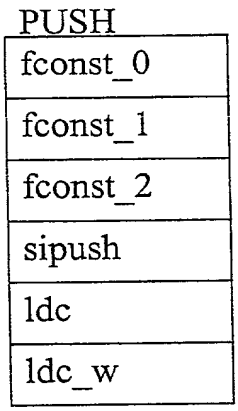

Fig. 4B

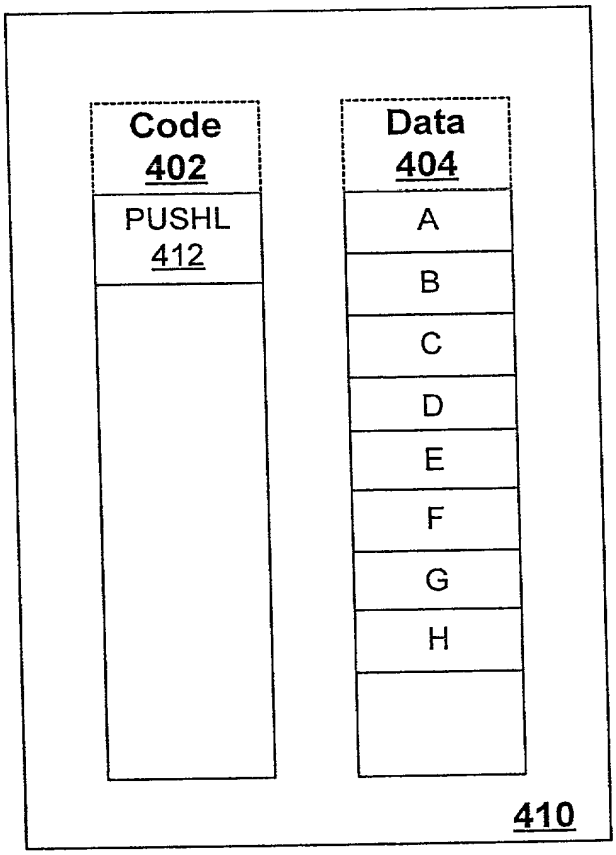
Code
402
PUSHL
412
Data
404
A
B
C
D
E
F
G
H
410

Fig. 4C

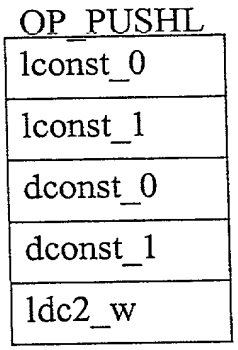
OP_PUSHL
lconst_0
lconst_1
dconst_0
dconst_1
ldc2_w

Fig. 4D

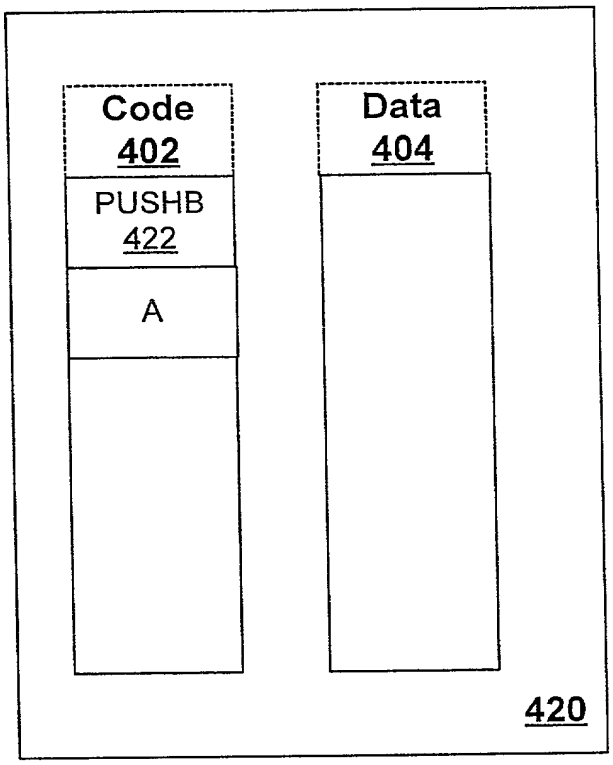

Fig. 4E

PUSHB
aconst_null
iconst_m1
iconst_0
iconst_1
iconst_2
iconst_3
iconst_4
iconst_5
bipush

Fig. 4F

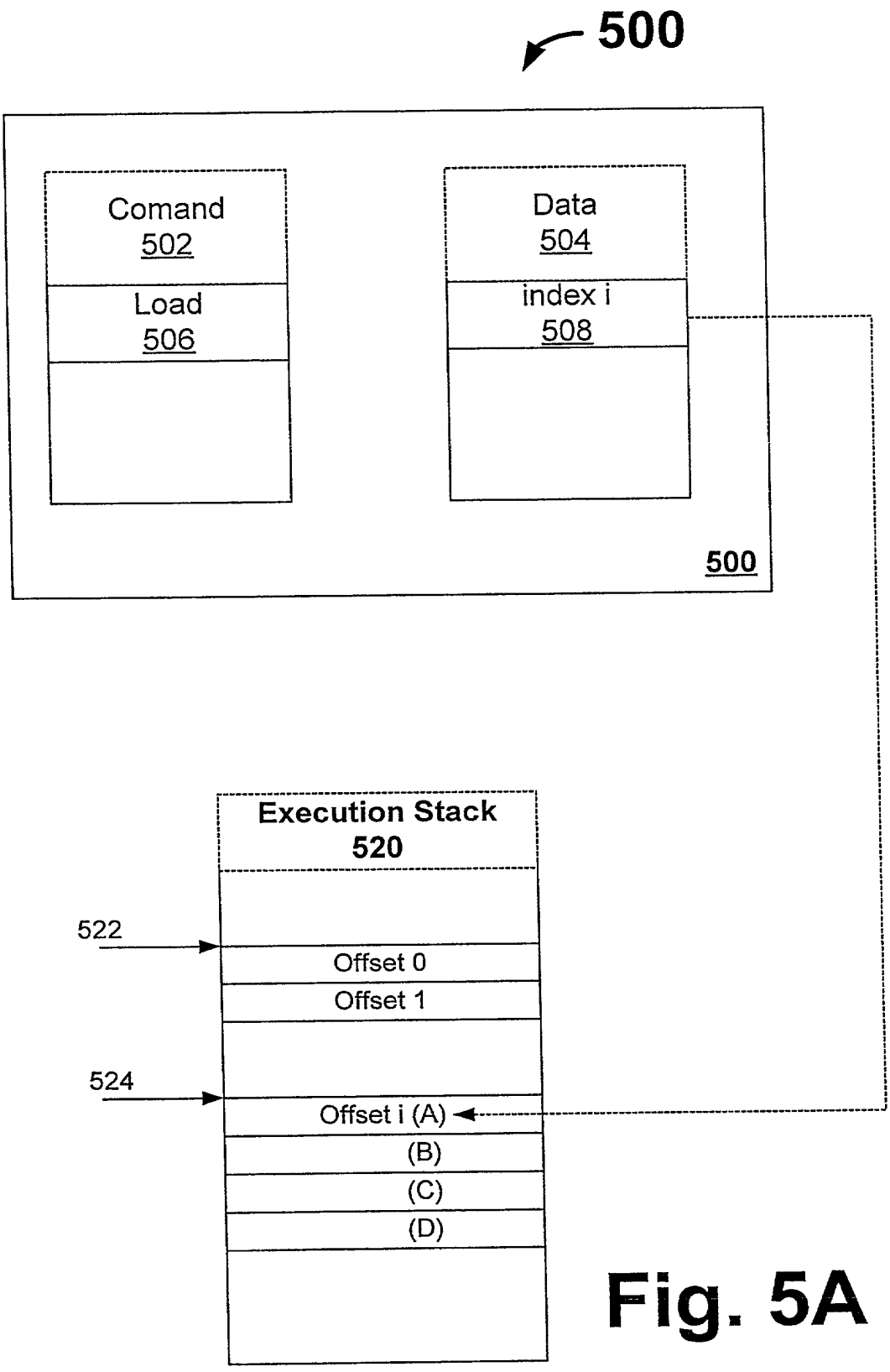
500
Comand
502
Load
506
Data
504
index i
508
500
Execution Stack
520
522
Offset 0
Offset 1
524
Offset i (A)
(B)
(C)
(D)

Fig. 5A

LOAD
iload
fload
aload
iload_0
iload_1
iload_2
iload_3
fload_1
fload_2
fload_3
aload_0
aload_1
aload_2
aload_3

Fig. 5B

LOADL
lload
dload
lload_0
lload_1
lload_2
lload_3
fload_0
dload_0
dload_1
dload_2
dload_3

Fig. 5C

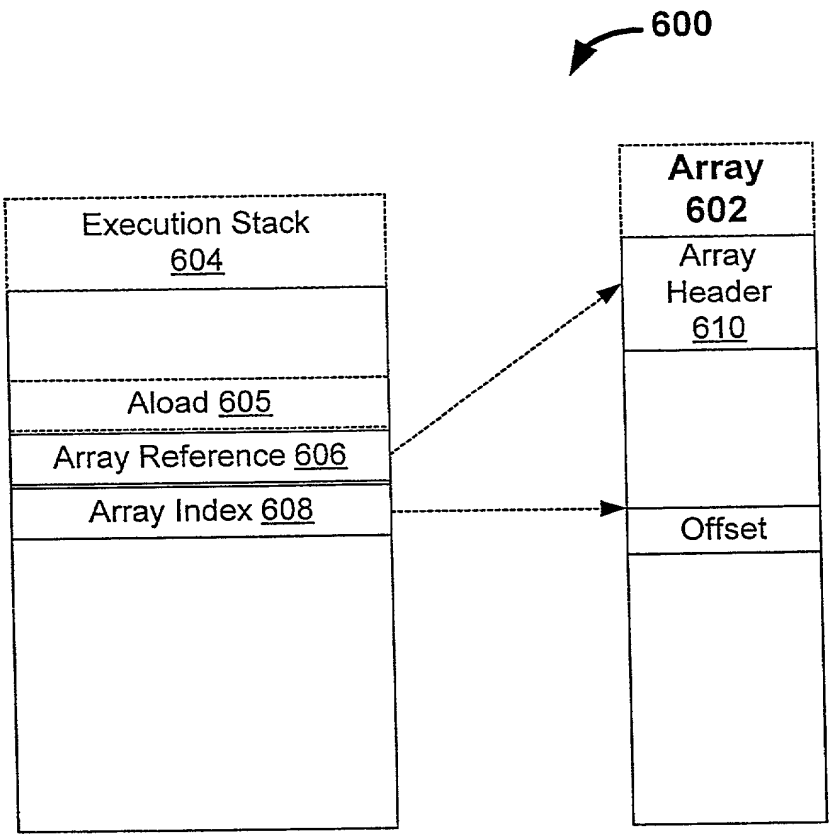

Fig. 6A

ALOAD
iaload
laload
faload
daload
aaload
baload
caload
saload

Fig. 6B

EP 2 320 318 A1

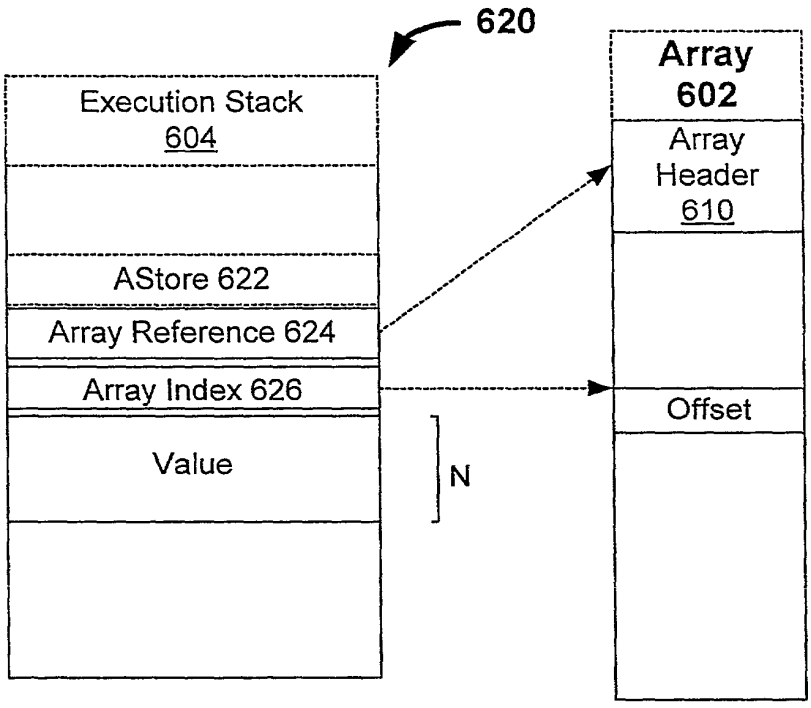

Fig. 6C

ASTORE

iastore
fastore
aastore
bastore
castore
sastore

Fig. 6 D

ASTOREL

lastore
dastore

Fig. 6 E

lcmp	OP_LSUB, OP_JMPEQ
fcmpl	OP_FSUB, OP_JMPLE
fcmpg	OP_FSUB, OP_JMPGE
dcmpl	OP_DCMP, OP_JMPLE
dcmpg	OP_DCMP, OP_JMPGE

Fig. 6F

if_icmpeq	OP_ISUB, OP_JMPEQ
if_icmpne	OP_ISUB, OP_JMPNE
if_icmplt	OP_ISUB, OP_JMPLT
if_icmpge	OP_ISUB, OP_JMPGE
if_icmpgt	OP_ISUB, OP_JMPGT
if_icmple	OP_ISUB, OP_JMPLE
if_acmpeq	OP_ISUB, OP_JMPEQ
if_acmpne	OP_ISUB, OP_JMPNE

Fig. 6H

Patent Application Publication

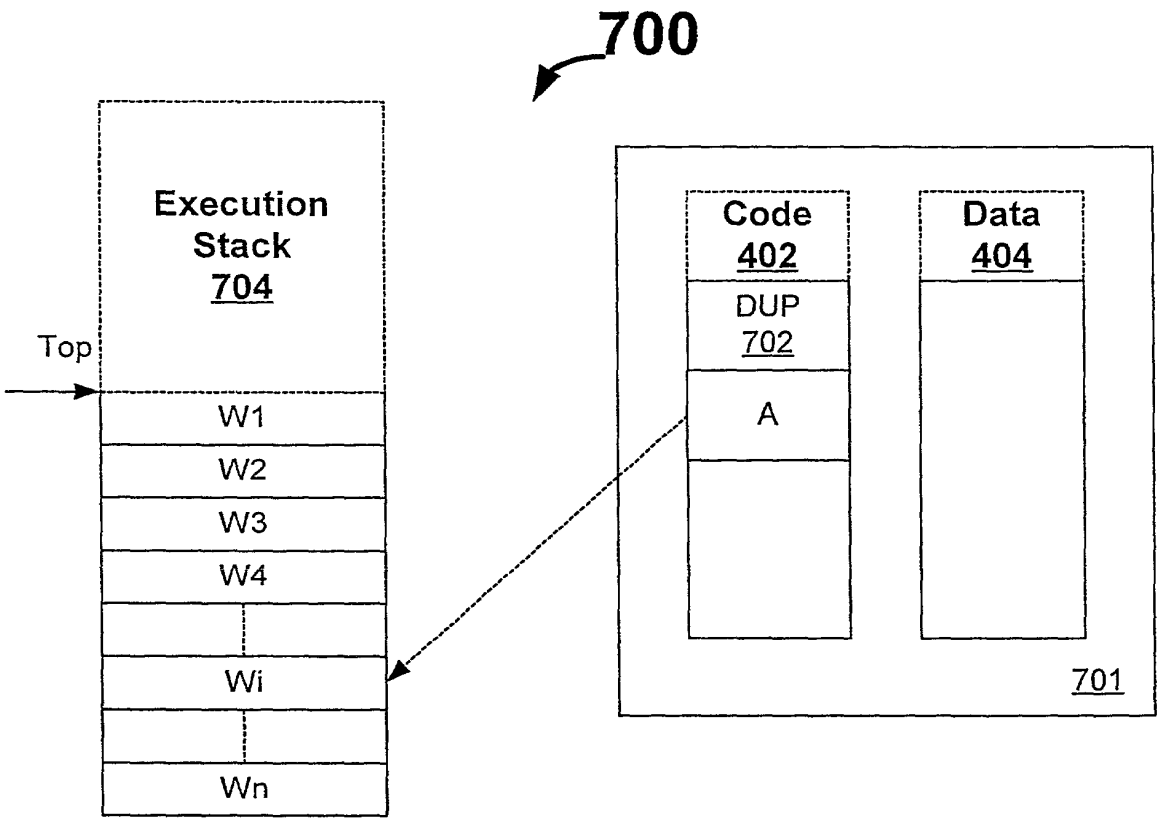

Fig. 7A

DUP
Dup
Dup_x1
Dup_x2

Fig. 7B

DUPL
Dup2
Dup2_x1
Dup2_x2

Fig. 7C

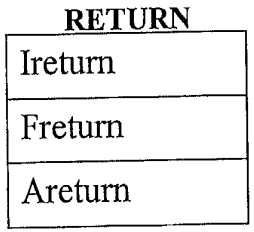

Fig. 8A

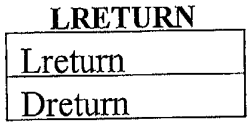

Fig. 8B

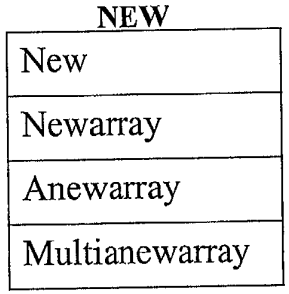

Fig. 9